

UNIVERSITY OF EDINBURGH

T H E S I S

Presented for the Degree of M. D.

by

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M.B., and Ch.B., (Edin.)

April 1901.

S U B J E C T .

"UTERINE HAEMORRHAGE FROM EXTRAUTERINE CAUSES IN

THE NON-PUERPERAL STATE."



UTERINE HAEMORRHAGE

from

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E. NEAVE, M. B.

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PART I.

That uterine haemorrhage is often due to causes outside the uterus is well known, but I think, not sufficiently recognised. On looking up the subject in the different text books, and on consulting the Transactions of Obstetrical and Gynecological Societies, one finds very little information on this subject. No doubt, a great deal has been written on uterine haemorrhage, but very little is said regarding any cause operating outside the uterus. Of course, the subject is an exceedingly difficult one for there may be two conditions or causes at work, one in the uterus and another outside it, both leading to uterine haemorrhage and, in such a case, the question as to whether the condition outside the uterus existed before the other, or not, is not easily answered. The one condition may be dependent on the other, or it may not. It is only by concomitant clinical and pathological observation that more light can be shed on the subject. During a residence for a period of six months in a London Hospital for Diseases of Women, I may safely say that not a single case of uterine haemorrhage could I put

down definitely as due to a cause operating outside the uterus. Since then, however, I have come across one or two such cases in practice, and several others in the literature of the subject.

Let us, first of all, define the term uterine haemorrhage.

Uterine haemorrhage of course, means haemorrhage from the interior of the uterus and this haemorrhage manifests itself per vaginam.

There are, however, certain haemorrhages which may be mistaken for uterine haemorrhage. They are as follows:- Injuries or ulcerations of the vagina, vulva, or hymen, rupture of varicose veins of the labia or vagina.

The latter condition is usually associated with pregnancy.

Menorrhagia and Metrorrhagia. I shall take the term uterine haemorrhage as embracing menorrhagia, that is, haemorrhage occurring at the time of menstruation beyond the usual quantity and metrorrhagia that is, haemorrhage occurring at other times, and shall leave out of account altogether haemorrhage connected with the puerperal state.

Of course, the terms menorrhagia and metrorrhagia are somewhat indefinite; it is oftentimes difficult to tell where menorrhagia ends, and metrorrhagia

begins. Still, these terms are useful for the purposes of description, and, in the present paper, I propose using them as defined above.

Importance of Uterine Haemorrhage.

Uterine haemorrhage is important for two reasons

1. When great or prolonged, the health of the patient may become seriously impaired, and even her life placed in danger.
2. Bleeding from the uterus is often the first symptom of malignant disease.

For these reasons alone, then, uterine haemorrhage is very important, more especially to the general practitioner.

When called upon to treat a patient suffering from uterine haemorrhage, should a vaginal examination be made?

In such a case, the first thing that the practitioner usually does, is to make a vaginal examination. But in many cases it is advisable not to make a vaginal examination. For example, in the case of virgins and young children, it is not often necessary to make a vaginal examination, because much information may be elicited by an examination of the other organs of the body, and it should be the medical man's duty, to avoid if possible, what often does harm - a vaginal examination. Moreover, in virgins, cancer of the cervix is so rare and the

objections to a vaginal examination so great that it is better to run the risk of overlooking early cancer than to examine per vaginam.

In the case of married women, especially those, who have borne children, when no cause outside the uterus can be found to account for the bleeding, a vaginal examination should be carefully made.

Uterine Haemorrhage - a symptom.

Uterine haemorrhage is a symptom of the most varied affections and is not to be regarded as an entity or as a disease per se, so that when called upon to treat a patient, whose prominent, and it may be only, symptom is uterine haemorrhage, one has often to look for the cause outside the uterus altogether. Indeed, the gynaecologist more than any other specialist has to take note of, and examine carefully the condition of all the organs of the body.

Relation between the reproductive organs and and the other organs of the body.

The reproductive organs and the other organs of the body are intimately related to one another. The body is like a delicate piece of mechanism, each part being dependent on some other part or parts, for the proper performance of its function, so that, when

one organ or system of the body becomes deranged, other organs or systems are apt to become deranged also.

In speaking of metrorrhagia, "Edis, in Brit. Gyn. Soc. Trans." says "Make a diagnosis by first getting the history. Before making a local examination examine carefully the state of the heart, lungs, liver; also examine the urine for evidence of renal mischief."

Thus it will be seen, how important it is for the medical man, treating a case of uterine haemorrhage to examine carefully all the organs of the body. "Functional disturbances of remote organs are very commonly due to some definite morbid local condition of the uterus or ovaries, the irritation being conveyed along the sympathetic and spinal nervous system." (Playfair in Allbutt's System of Gynaecology)

The converse is probably also true. Disturbances of remote organs may lead to disturbances of the functions of uterus or ovaries.

In pregnancy, we have different symptoms, which often arise, e.g. vomiting, neuralgia, etc. Similar disturbances may occur in the non pregnant women, e.g. tumour of the ovary may sometimes give rise to obstinate vomiting.

Menstruation.

The uterus is a very vascular organ, being richly supplied with blood vessels, consequently what would be sufficient to cause hyperaemia in another organ might be sufficient to cause haemorrhage in the uterus, for example, an emotion may cause a blush (hyperaemia) to appear on the cheek and an emotion may cause a transient hyperaemia to appear in the uterus, but, in the latter case, bleeding may result. The uterus is peculiar as being the only organ in the body, from which bleeding occurs as a normal physiological process. At the same time, this bleeding (menstruation) strongly resembles a pathological condition, and indeed, would be considered so, in any other organ of the body. In fact, the line of demarcation between health and disease in uterine haemorrhage is as difficult to define as that between sanity and insanity.

The best way, as suggested by Croom in Allbutt's System of Gynecology, is to compare the flow and number of days with the patient's general habit, and also if it is affecting her health. There is a certain standard for each woman and it is only by comparing her period with her normal menstruation that we can arrive at a definite conclusion as to whether the process is pathological or not.

Some men adopt an arbitrary standard by striking an average for a large number of women. Thus the function is said to be excessive if it last longer than six days. The actual amount of blood lost is usually estimated in terms of the number of diapers employed, ten to fifteen being the average number for each period. If there is anaemia after menstruation, then the process may be regarded as pathological.

Before proceeding further, let us consider shortly the process of menstruation.

Menstruation is the term given to a series of changes, which occurs in the female periodically usually every month. The most obvious of these changes is a sanguineous discharge from the interior of the uterus, but there are other phenomena for example:- Congestion of the pelvic viscera, ovaries, uterus, tubes, vulva, vagina. The breasts are turgid with blood. The endometrium of the body of the uterus grows rapidly in thickness, and is thrown into numerous folds before menstruation.

The sanguineous discharge is said to come only from the mucous membrane of the body of the uterus. There is great difference of opinion as to how much of the lining membrane of the uterus is shed at the menstrual period. Some say that the whole mucous lining of the uterus, down to the muscular layer is

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The sanguineous discharge is said to come only from the mucous membrane of the body of the uterus. There is great difference of opinion as to how much of the lining membrane of the uterus is shed at the menstrual period. Some say that the whole mucous lining of the uterus, down to the muscular layer is

removed, others that only the superficial part of the mucosa is cast off, while others assert that only the epithelium over part of the surface is shed at the time of menstruation. Besides the local phenomena several general phenomena observe a monthly periodicity, for example, there may be gastric or nervous disturbances, uneasiness or actual pain in the pelvis and in the breasts. The secretion of urea reaches a maximum before and a minimum after each period. The temperature, pulse, and arterial tension follow a similar course.

Nervous mechanism of menstruation.

As regards the nervous mechanism of menstruation there is supposed to be a special nerve centre, situated in the lumbar part of the spinal cord and that impulses to menstruation reach the uterus through the pelvic splanchnics or the ovarian plexus or both.

Effect of removal of the ovaries.

After the removal of both ovaries, it has been noted that menstruation may continue, and even the removal of both tubes and ovaries does not always ensure the stoppage of menstruation. The probable explanation is that the nerves governing the process of menstruation have to be cut before menstruation ceases.

Sinclair's Theory.

Sinclair (in B. M. J. of 1893) says:-

"Haemorrhage after removal of ovaries and tubes depends almost entirely on anatomical and not physiological considerations. If the arteries are tied, even though the tubes and part of the ovaries be left, involution will follow in the body of the uterus and menstruation will cease. If the arteries are not tied, there will be profuse metrostaxis and menstruation will continue, it may be for months or years, even when the ovaries and tubes have been carefully removed." This theory is open to criticism. The chief blood supply of the uterus comes through the uterine arteries, which are not interfered with by the operation. Moreover, when some only of the arteries supplying a vascular area are ligatured, the other vessels in the neighbourhood soon undergo a compensatory hypertrophy. It is much more probable that the arrest is brought about by severing the nerves, which govern the process of menstruation. The channel is supposed to be either the ovarian plexus or "Johnson's nerve", but as only the upper part of the broad ligament is tied, the nerves must be contained in this portion of the broad ligament. Johnson's nerve of menstruation runs up between the round ligament and the Fallopian tube, starting from the base of the broad ligament

and ending in the uterine cornu, just beneath the Fallopian tube.

Others have attempted to explain the continuance of menstruation, after the removal of ovaries and tubes, by saying that it is merely a continuance of the habit, after the original cause is removed, also that, those rare losses in the pregnant state may be explained in a similar manner. There is another explanation, however, namely, the irritation in the broad ligament caused by the cicatrix after operation, but I shall refer more fully to this later on. Thornton in Heath's Dictionary of Surgery explains it by saying that there is sometimes a third ovary. Bland Sutton says this theory cannot be entertained, as there is no authentic instance on record of a third ovary. He says the bleeding may be due to fibroid disease or other disease of the uterus, which has been overlooked. Mittelschmerz.

I may allude here to Mittelschmerz or middle period, when, about the middle of the interval between the periods, there is pain, sometimes accompanied by a sanguineous discharge. Laycock in 1840 (Nervous Diseases of Women) gave instances of women, with an intermenstrual period.

It is also mentioned by Halliday Croom in Trans. of Edin. Obst. Soc., Vol.XXI., 1896.

Some observers think that Mittelschmerz is due to disease of the Fallopian tubes but Bland Sutton and Cullingworth deny this.

Routh and MacLean at the London Obst. Soc. on 2nd March 1898, said they believed that in such a condition we may trace a double menstruation and that the phenomenon may be explained by assuming that in certain cases there is an intermenstrual as well as a menstrual cycle. The latter seems the most natural explanation of the condition.

It is a somewhat rare condition and yet I met a practitioner lately, who has seen one or two cases in private practice, although in his cases, the discharge was not bloody.

Metrorrhagia at Puberty.

Coe (New York Med. Journal, 1887.) in a paper entitled "Metrorrhagia at the time of puberty", relates the following case:-

Patient a young girl aet 13 was seized with crampy pains followed by severe metrorrhagia a fortnight after the period. The haemorrhage was very severe and lasted several days, but caused little constitutional disturbance. Four days after its complete cessation, the normal period appeared; it was profuse. Patient became quite well.

Coe's explanation is that the patient lived at the seaside, where pelvic congestion of the female

organs is said to be common. He says the condition in his case was physiological. In such cases the treatment should be mainly expectant.

PART II.

In discussing the extra-uterine causes of uterine haemorrhage, I shall first of all consider Abnormal Conditions of the Uterine Appendages.

There is no doubt that the ovaries exert a continuous impression on the uterus, regulating its constitutional changes and functions in health. It is also very probable that if the ovaries be diseased a morbid impression will be produced on the uterus.

Martin's Theory.

Martin (in Med. Press and Circ., 1893) says:- "The pelvic splanchnics are supposed to be vaso-dilator in function and are probably concerned in bringing about the determination of blood to the uterus, and appendages, which characterises menstruation.

There is supposed to be a menstrual centre in the lumbar enlargement of the spinal cord, analogous to other centres in that region, e.g. those for micturition, defaecation, erection, ejaculation and parturition." This seems a very feasible theory and explains the haemorrhage, which occurs in such conditions as inflammation or tumours of the ovaries. For the pelvic splanchnics being vaso-dilator in function, it follows that if any irritation is set

up in the course of the nerves, there will be dilatation of the uterine vessels. The uterine vessels may be unable to stand the extra strain put upon them, and so will rupture and produce haemorrhage.

In such cases. the question may arise:- "Is it not much more common for disease of the uterus to pass to the tubes and ovaries than vice versa? The answer is "Yes," but clinical evidence shows that in many cases, where the ovaries and tubes were diseased no uterine symptoms existed, before these disorders were diagnosed. Let us compare primary disease of the endometrium, due to gonorrhoeal infection or puerperal sepsis, which enter the uterus from without with secondary disease the result of chronic affections of the appendages. That infection may pass through the vagina into the uterus, ovaries and tubes is well known, but that mischief beginning in the ovaries or tubes passes into the uterus cannot be easily proved.

Relation between uterine and tubal mucous membrane.

In this connection, we may try to trace a relation between the tubal and uterine mucous membrane. In physiological processes, a strong relation can be observed, as in the formation of a uterine decidua in tubal gestation.

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certain decidual reaction of the mucosa to the fertilised ovum is necessary for the implantation of the ovum and that this reaction occurs normally only in the mucosa of the corpus uteri. But the uterus and tubes are both derived from the Mullerian duct and in lower mammals, decidual reaction can occur and ova can be normally implanted in a larger portion of the oviduct than that represented in the human uterus.

Webster holds, therefore, that by some developmental error, whereby there is reversion to an earlier stage in mammalian evolution an unduly large portion of the oviduct may show decidual reaction.

Cause of the haemorrhage in diseases of
the uterine appendages.

What is the cause of the haemorrhage in diseases of the ovaries and tubes? Some observers have traced the reflex hyperaemia and hyperplasia of the endometrium near the climacteric to the disturbance of ovarian functions. In some of the cases, however, it was observed that metrorrhagia existed where the ovaries were perfectly healthy, and the tubes or broad ligaments diseased. One observer (Czempin, B. M. J., Vol.II., 1887.) has discovered uniform thickening of the endometrium removed by scraping in cases of pyosalpinx, solid ovarian growths and

chronic ovaritis, where the uterus was distinctly enlarged. In other cases there was very slight thickening of the endometrium; in other cases again, there was no thickening, though much metrorrhagia was present. In the latter case, the blood must have come from the hyperaemic tubal mucous membrane. Such a case has been reported by Ashby. (See case of Haematosalpinx)

Special attention has been called to the character of the metrorrhagia, which accompanies chronic diseases of the appendages. It is preceded by a violent pain on the cessation of which, the bleeding continues for a few days. In all these cases, inflammatory changes are found in the ovaries, tubes or parametrium. On proper treatment of the primary cause, the haemorrhage disappeared.

On the other hand, metrorrhagia from the irritability of an operative cicatrix in the broad ligament, though more copious than the normal menstrual flow is seldom preceded by any pain.

In salpingo-oophoritis, menstruation is generally profuse and irregular. Some writers regard the haemorrhage in this case as due to the disease of the appendages, others regard it as a result of the endometritis, which, by extension produced the tubal disease. Congestion of the ovaries may be included

in the terms hyperaemia and chronic ovaritis. The different reproductive organs are so closely connected with each other that the condition of all of them is apt to be very much alike, e.g. hyperaemic anaemic, etc. And so, observers have noted that, when the ovaries are hyperaemic the uterus is apt to be hyperaemic also, as is evidenced by menorrhagia. One observer (Lawson Tait) has gone the length of saying that when the inflammation has continued for some length of time, induration of the ovary takes place and there is amenorrhoea. Both acute and chronic ovaritis are generally secondary, the inflammation spreading from contiguous structures, especially the Fallopian tubes. The uterine haemorrhage, due to ovaritis is sometimes so excessive and obstinate that removal of the ovaries gives the only chance of relief.

I may now enumerate the causes which lead to ovarian congestion and ovarian irritation, which in turn lead to uterine haemorrhage. Displacements of the ovaries, especially prolapse, are apt to lead to ovarian congestion and irritation. Prolapse of the ovaries occurs, when there is prolapse, or retroversion or retroflexion of the uterus, the ovaries owing to their ligamentous attachments, being dragged down by the uterus. But sometimes, the ovaries are prolapsed, without any uterine displacement. When

this is the case, there are many symptoms which arise, and are included in the term "ovarian irritation."

Prolapse of ovaries causing menorrhagia.

Prolapse of the ovaries is a frequent cause of profuse menstruation. Imlach in Brit. Gyn. Soc. Journal, Vol.I., page 378, in a paper entitled "On the treatment of Prolapsed Ovaries by Oophorraphy" relates several cases, in most of which there was profuse menstruation. One of his cases will suffice to illustrate the condition.

Case of prolapsed ovaries, with profuse menstruation.

M. M. single, aged 23, with constant back-ache, bearing down pains and sickness, irregular, profuse and painful menstruation, anteflexed retort-shaped uterus, tender, prolapsed ovaries, and a history of acute rheumatism a month previously, the diagnosis of which, however, seems doubtful. She had been a domestic servant but was quite unfit for any employment, and the therapeutic stores of the hospital had been exhausted upon her without benefit. July 3th, oophorraphy. The infundibulo-pelvic ligaments being unusually long the operation proved a very easy one. Neither immediately after operation, nor afterwards was the anteflexion diminished, but her symptoms have certainly disappeared and she is now

in service.

In this case the profuse menstruation appeared to be due to the prolapse of the ovaries, for when this condition was cured, the profuse menstruation ceased.

Trauma as a cause of profuse menstruation.

The following case, in which profuse menstruation seemed to be due to a blow on the external genitals, may be related (Felkin in Edin. Obst. Trans. Vol. XII.) Patient, 17 years old, began to menstruate at 16, and always regular. A boy struck her on the pubes with a broom handle six months ago. Since then, she has had a swelling of the labia minora and this swelling has increased in size at each menstrual period. The menstrual discharge is profuse and lasts five days. The swelling was tapped and dressing applied. The patient recovered and menstruation became normal.

Probably the cause of the profuse menstruation was reflex congestion of the endometrium.

Immoderate coitus, especially in young married couples, may lead to uterine haemorrhage. I had a case some time ago illustrating this condition: Patient was a young woman who had been married a month. She said she had been losing blood for a fortnight.

She had missed no period and the flow began without any assignable cause a fortnight after her last period. After a few days' rest in bed, with small doses of ergot, the bleeding stopped and patient became quite well. I may say that vaginal examination revealed nothing abnormal. There is no doubt that, in this case, the haemorrhage resulted from ovarian congestion due to sexual overstimulation.

Another cause of ovarian irritation which some writers give, is recent marriage, where there is general excitement and unaccustomed exertion.

Other causes of ovarian irritation leading to menorrhagia are: Sudden sexual excitement, as for example, when marriage occurs late in life. The ovaries, having been in a quiescent state for years, are suddenly stimulated, and become unduly congested, and so menorrhagia is produced. Sexual stimulation suddenly denied is also apt to lead to ovarian irritation and menorrhagia for example, in young widows and in prostitutes, confined in penitentiaries.

Masturbation and emotional states, e.g. a long engagement, mental worry, grief, are also given as causes of ovarian irritation. I had an example of the latter in my practice. A woman nursed her husband for a month. He died and for some time afterwards, the widow suffered from menorrhagia.

I attributed the menorrhagia to the profound grief which the woman suffered. I could not find any other cause. With rest in bed and small doses of ergot, the haemorrhage ceased and menstruation became normal.

OVARIAN TUMOURS AS A CAUSE OF UTERINE
HAEMORRHAGE.

Let us next take up tumours of the ovary as a cause of uterine haemorrhage. There is no doubt that tumours of the ovary sometimes lead to uterine haemorrhage. Many cases have been reported. It seems that menorrhagia is apt to occur with small cystic ovaries, whereas with a large cystic ovarian tumour, there is usually amenorrhoea. Menorrhagia is also apt to occur with solid ovarian growths, but in the case of tubercle of the ovary amenorrhoea is the usual condition. With many ovarian growths, however, menstruation is unaffected. Taking all kinds of ovarian tumours, it appears that, during menstrual life, in about one third of the cases menstruation is unaffected; in the remainder the majority shew a tendency towards amenorrhoea and the others towards menorrhagia.

Case of Uterine haemorrhage, due to cystic ovaries:

Bond, in the Lancet, 1894, relates a case of

uterine haemorrhage due to small cystic ovaries. The ovaries were full of small cysts, filled with dark blood, thus showing the intense ovarian engorgement. After the removal of the ovaries the profuse haemorrhage ceased.

Case of menorrhagia due to dermoid tumour of the ovary:

Bantock, in Brit. Gyn. Journr. Vol.3, p.349, relates a case of dermoid tumour of the ovary leading to menorrhagia.

Patient was a single lady, aged 26, and had been under his care, on and off, for over two years, for menorrhagia. "She had been repeatedly examined, but nothing abnormal was detected till the end of February last, when he first discovered an enlargement of the right ovary." He waited three months, but the symptoms continued, and he operated. Each ovary contained a dermoid cyst, and both ruptured as they were being taken out. The subsequent history of the case is not given.

Cases of menorrhagia, due to sarcoma and carcinoma of the ovary have been reported.

Menorrhagia in twisted Pedicle.

Uterine bleeding in acute torsion of the pedicle of an ovarian tumour would appear to be a somewhat rare condition. No mention is made of the condition

in Allbutt's System of Gynaecology. Schaute, however, in Lehrbuch d. Ges. Gyn., page 397, says that "a regular indication of the occurrence of twisting of the pedicle is bleeding from the uterus".

Again, Braun in the Centralb. für Gyn. 1895, page 632, reports a case of twisted pedicle, where after lasting one year, uterine bleeding ceased after an operation.

In many cases of twisted pedicle, there may be slight uterine bleeding, which owing to the severity of the other symptoms, may be overlooked.

Ovarian tumours causing uterine haemorrhage
before puberty.

All the cases of ovarian tumours leading to uterine haemorrhage, already mentioned are cases, occurring during menstrual life. It is well known however, that ovarian tumours, occurring before puberty, may also lead to uterine haemorrhage. It appears that tumours of the ovary have a considerable influence in the production of precocious puberty and premature menstruation.

Many cases have been reported, in which the catamenia set in shortly after birth, but the state of the ovaries is not given.

C. E. Harle (quoted by Croom in Allbutt's System of Gynaecology) records the result of a post-mortem examination on a child, who had begun to menstruate

at the age of five months; the menstruation returned regularly till the fourteenth month, when the child died of diarrhoea. The pudendum was large and clothed with hair, the uterus was large, the os patent and the lips congested, the vessels of the broad ligament were injected and both ovaries were cystic. Halliday Croom (ibid) however, does not believe that tumours of the ovary, tending to produce changes in the sexual apparatus before puberty, are so common as is usually supposed. He examined the records of twenty six laparotomies performed in children under puberty and in one case only did the signs seem so marked, as to arrest attention.

The child was aged seven and had had a haemorrhagic discharge from the vagina, which recurred whilst she was in hospital.

The mammae were firm and about the size of oranges; the mons veneris was of unusual elevation and covered with hair about one inch in length. There was a tumour of the right ovary, which was removed and the child made a good recovery. The vaginal discharge disappeared, and the mammary prominence subsided before she left the hospital. It is said that tumours of the ovary in children are usually dermoid - not sarcoma.

Other abdominal tumours may lead to precocious puberty, for example, sarcoma of the suprarenal body.

Other causes of premature menstruation and precocious puberty are:- Heredity, immoral associations, want of cleanliness, masturbation, over-excitability of the brain, local condition, for example, ascarides in the rectum.

Ovarian tumours causing uterine haemorrhage,
after the menopause.

Women, past the menopause are apt to consider any sanguineous discharge as a return of the menses.

Cases of protracted menstruation have been reported, but it is an extremely rare condition. In fact, any post-climacteric uterine bleeding should be viewed with suspicion.

There is no doubt, however, that ovarian tumours after the menopause may sometimes give rise to uterine bleeding. Lewers (Lancet, Vol.I. 1897) says:- It may be concluded that bleeding as a result of ovarian tumour, after the menopause is a somewhat rare event. That this symptom may occur, however, is mentioned by Pozzi in the following passage:- "After the menopause, congestive phenomena have been noted in the uterus, leading to the re-appearance of a more or less irregular bloody discharge, which makes the patient believe that menstruation has returned. Lewers (ibid) reports a case of uterine haemorrhage, due to an ovarian tumour after the menopause. Woman aged 54, with a large ovarian

cyst. He says: "It seems certain that the metrorrhagia was to be accounted for by the development of the ovarian tumour, exciting a sympathetic congestion of the uterine mucous membrane. The uterus was healthy."

Garrigues in "Diseases of Women, 1894, says: "On the other hand, even after the menopause new haemorrhagic discharges from the uterus may occur."

Tubal disease as a cause of uterine
haemorrhage.

Let us next consider tubal disease leading to uterine haemorrhage. Pyosalpinx usually leads to an increase of the menstrual flow, also hydro- and haemato-salpinx.

Tait says:-"The symptoms of the disease (pyosalpinx) are almost uniform. We have painful and profuse menstruation invariably." He further says:- "It is almost impossible to make a differential diagnosis between pyo-, hydro- and haemato-salpinx."

Three cases of pyosalpinx with menorrhagia.

Lawson Tait (Brit. Gyn. Jour. Vol.I. page 121) relates three cases of pyosalpinx, where menorrhagia was present.

1. Patient was a young lady. She suffered from profuse menstruation and pain during the flow. Both tubes, each containing a large amount of thick

pus, were removed. Five years after the operation, patient was in perfect health.

2. Mrs M., aet 36, married for four years, no children; her menstruation was regular, lasting for a week, extremely profuse, and accompanied by great pain, the pain coming on several days in advance of the period.

The appendages on each side were removed. Both tubes were found to contain dark yellow pus.

3. E.H. aet 22, had a severe attack of gonorrhoea. She was about a year in getting free from the vaginitis and during the whole of that time, she suffered from constant pelvic pain and profuse and painful menstruation. Pyosalpinx was diagnosed and the appendages were removed. The tubes were large, thick and almost cartilaginous in texture, each containing about a teaspoonful and a half of pus.

Case of menorrhagia due to hydrosalpinx.

Dr Bantock (ibid) related a case of hydrosalpinx on one side, and a small solid ovarian tumour on the other. "Menstruation was excessive and painful."

Case of haemato-salpinx, in which there was haemorrhage from the uterus. (Ashby in International Clinics, Philadelphia, 1891)

The patient was a multipara and had suffered

from uterine and pelvic disease since the birth of her last child, ten years before. She suffered from time to time from discharges of blood. It seemed as if there were a reservoir of blood, which gradually filled and suddenly emptied itself at no stated interval of time. At first, no satisfactory cause could be found. She was curetted, but the discharges continued. She was again examined, and a small intra-pelvic tumour, like a pus tube, was discovered. Laparotomy was performed and a distended pus tube with ovary removed. The walls of the tube were thickened and the cavity enlarged. The tube was opened with a knife and dark grumous blood escaped, but no blood clots. The mucous membrane was hypertrophied and thickened, and thrown into numerous folds. It was very hyperaemic. There was no doubt that the mucous membrane in this case had been pouring out neither pus, nor watery serum, but had been sweating out a dark venous looking blood. The blood had accumulated in the tube from time to time, and, whenever the cavity of the tube became overdistended by a spasmodic action, the contents of the tube were ejected into the uterine cavity. The patient became quite well and the haemorrhage ceased.

Tubercular Salpingitis appears to be rather an uncommon condition. It is sometimes primary, but as a rule, it is secondary to tubercular disease elsewhere, usually in some of the neighbouring organs e.g. peritoneum, intestine, etc.

Albun Doran (System of Gyn.) says: There may be amenorrhoea. As a rule, however, menstruation is profuse and painful. He thinks these symptoms are due to tubercular infection of the endometrium.

Papilloma of the tube may give rise to menorrhagia. Doran (in System of Gyn.) tabulates six cases of this disease, in one of which there was menorrhagia.

Case of papilloma of tube with menorrhagia.

Patient was aet 39 and suffered from severe pelvic pains and profuse menstruation. The right tube was size of a finger. "Interior stuffed with adenomatous masses. Left tube was also diseased. Bland Sutton removed both tubes and patient was well four years after the operation. Doran also tabulates several cases of "primary malignant disease" of the tube, in a few of which there was either a sanious watery discharge, or profuse menstruation.

These conditions are rare, and we shall now pass on to more common diseases, which give rise to uterine haemorrhage .

Ectopic Gestation as a cause of uterine haemorrhage.

In tubal pregnancy, there is first of all amenorrhoea, then later menorrhagia. The menorrhagia is often looked upon as the recommencement of menstruation. If a sudden rupture (tubal abortion) of the gravid tube occur there is usually external (uterine) haemorrhage. Again, if the foetus die, there is expulsion of a decidual cast of the uterus with haemorrhage.

The blood which comes from the uterus in early tubal pregnancy is often dark in colour. Cullingworth believes that this is so invariably the case that the dark colour is a valuable diagnostic sign. Pelvic haematoma and haematocele are usually due to rupture of tubal gestations, but many believe these conditions may occur apart from tubal pregnancy. In these conditions, uterine haemorrhage may occur. The usual history in such a case is that either as a result of some excessive work, undertaken at the period, or of a chill, caught after the flow has begun, the discharge suddenly ceased, but reappeared and thereafter continued for a longer time than usual, perhaps a fortnight.

Priestley (Allbutt's System of Gyn. page 542) says: "Metrorrhagia is one of the commonest concomitant symptoms of pelvic haematocele. So great is the haemorrhage sometimes that the practitioner's

attention is mainly taken up with it, to the exclusion of other symptoms."

Pelvic Inflammation. Menorrhagia occurs in parametritis and perimetritis, and is said to be due to the veins becoming plugged and so preventing the venous return from the uterus. In such cases, the haemorrhage, unless excessive, may be beneficial by depleting and thus relieving the inflammatory condition.

PART III.

Let us next take up the diseases belonging to the different systems of the body, beginning with the Alimentary System.

There is not doubt that the alimentary and reproductive systems are intimately related to one another, e.g., witness the vomiting of early pregnancy. Moreover, the functions of nutrition and reproduction are closely allied. Many believe that the function of menstruation is a katabolic one, (Ceddes and Thomson's Evolution of Sex) that is to say, that a woman, after puberty manufactures from her food more protoplasm than is needed to supply the waste of the body. The surplus is disposed of by the process of menstruation. Should, however, pregnancy occur, the surplus is a surplus no longer, but goes to nourish the foetus in utero. After parturition, the anabolic processes continue and the excess protoplasm is removed by means of the process of lactation. When lactation is over the process of menstruation is re-established. Thus in a woman, during her reproductive life, the anabolic processes preponderate over the katabolic, the surplus being disposed of, either by menstruation, pregnancy or lactation.

This theory is a feasible one and receives

support from the fact that in anaemia, menstruation, as a rule, is in abeyance, that is, as there is no surplus to be disposed of, menstruation ceases.

The amenorrhoea in this case, is conservative.

Certain pathological conditions of the uterine annexa are apt to lead to disturbances of the stomach or bowels, e.g., obstinate vomiting may sometimes result from an ovarian cyst. The reverse appears to be also true, namely, that disturbances of the alimentary system may lead to disturbances of the reproductive system. I shall now mention some of the diseases of the alimentary system, which lead to uterine haemorrhage.

Epidemic Parotitis (mumps) is sometimes followed by inflammation of the ovaries, and rarely by uterine haemorrhage. I have not come across such a case, but as a possibility, it is mentioned.

Tonsillitis. There appears to be an intimate relation between the tonsils and the generative organs. Osler (in Principles and Practice of Medicine) says: "An old notion prevails that there is a definite relation between the tonsils and the testes and ovaries. F. J. Shepherd has called attention to the circumstance that acute tonsillitis is a very common affection in newly married persons."

Similarly there appears to be a connection between the mucous membrane (adenoid tissue) of the

pharynx and the generative organs. In the Edin. Obst. Trans. Vol.XII., 1836-7, Falkin relates a case of Recurring Menstrual Pharyngitis. Woman aet 29. Complained of profuse menstrual discharge, sore throat, great thirst and difficulty in swallowing. She always had a sore throat at the menstrual period. The day before the discharge makes its appearance the patient notices that her throat feels very dry and that swallowing is painful. This uncomfortable feeling increases, until the discharge ceases, which it does on the third day. Two or three days after the discharge ceases, the throat regains its normal condition. On examination, the throat was intensely inflamed, uvula, soft palate and pharynx are dry and glistening, menstrual discharge profuse. The throat was treated and the patient became quite well.

Here then is a case, in which the profuse menstruation appeared to depend on inflammation of the pharynx. No mention is made of the condition of the tonsils.

Diseases of the Stomach.

Certain diseases of the stomach are said to lead to uterine haemorrhage. Byford in his book on "Diseases of Women", says that certain forms of dyspepsia may bring on uterine haemorrhage. Gastric Ulcer, which is more common in females than males,

is associated in a special manner in women, with anaemia and chlorosis and with menstrual disorders. These menstrual disorders may either be a decrease or an increase of the menstrual flow. Why gastric ulcer should affect menstruation is not known, but it would appear that two conditions - namely, anaemia and diminished alkalinity of the blood, which occur in cases of gastric ulcer, may themselves influence the menstrual flow. Be that as it may, it is certain that in a few cases of gastric ulcer, menorrhagia is present.

Cancer of the Stomach may lead to uterine haemorrhage, but whether the haemorrhage is the result of reflex irritation, or venous retardation, caused by the tumour pressing on the inferior vena cava, or of the anaemia or of secondary cancer in the uterus, is not known. Any one of these conditions might lead to uterine haemorrhage. I have not been able to get any cases, bearing on this subject. Probably the reason that little, if anything, has been written on the subject, is that the practitioner's attention is so much taken up by the stomach symptoms that little heed is paid to symptoms referable to distant organs, unless these symptoms are serious.

Diseases of the Liver.

Cirrhosis of the liver is said to be a frequent cause of uterine haemorrhage. The late Dr Johnson

said (Brit. Gyn. Jour. Vol. I) that 75% of the cases of menorrhagia were due to cirrhosis of the liver.

Cirrhosis of the liver, consequent upon alcoholic excess, very frequently leads to menorrhagia. The explanation of the bleeding is that, owing to backward pressure, venous congestion is produced in the uterus, and thus the menstrual flow becomes profuse. This bleeding is analogous to the bleeding which occurs from the stomach and bowels in cirrhosis of the liver. Many practitioners are familiar with cases where the menstrual flow has been excessive, and, in which, when alcohol was entirely cut off and remedies acting favourably on the portal circulation exhibited, the flow became normal. In many of these cases, alcohol may have been prescribed during a previous illness, and thus the patient acquired a liking for the stimulant, and continued taking it, after the condition which prompted the doctor to prescribe it, had disappeared. This then, is one of the most important extrauterine causes of menorrhagia, more especially for the general practitioner. Let him be careful in prescribing alcohol in the case of young women, and if called upon to treat menorrhagia in a young woman, let him not forget the possibility of alcohol being the cause of the condition.

Jaundice. In protracted jaundice, and in the more malignant forms of jaundice, haemorrhage from mucous surfaces may occur. As a rule, if haemorrhage does occur from the uterus, the other symptoms are usually so grave, that it is either overlooked or very little attention is paid to it. The cause of the haemorrhage in such cases is not known. The presence of biliary elements in the blood is, no doubt, an important factor.

Acute yellow atrophy of the liver and phosphorous poisoning are conditions which are said to lead to uterine haemorrhage. Of course, in these conditions, haemorrhages from other mucous surfaces occur. In both of these conditions, abortion may occur.

Passive congestion of the liver may be a factor in the causation of uterine haemorrhage. This condition is usually associated with chronic valvular disease, emphysema, cirrhosis of the lung, intra-thoracic tumours, etc. Cancer and other tumours of the liver, by causing backward pressure, may lead to uterine haemorrhage.

Constipation, resulting in large accumulation of faecal matter in the sigmoid, by pressing on the veins carrying blood from the uterus, leads to menorrhagia.

This is a more common cause of menorrhagia than one would suppose. It is a well known fact that many women are very careless regarding the proper emptying of the bowels, and, either from modesty or convenience, only go to the closet once or twice a week. In such cases, then, the practitioner should attend particularly to the state of the bowels.

Haemorrhoids is a condition, which sometimes causes menorrhagia, probably by reflex irritation. Cure the haemorrhoids, and the flow will become normal.

Diseases of the circulatory system leading
to uterine haemorrhage.

The connection between the circulatory and reproductive systems has long been recognised. The frequency of abortion, premature labour, haemorrhage at delivery and also the aggravation of cardiac lesions during pregnancy is well known.

Nevins (Brit. Med. Jour. 1889, Vol.II. page 1335) called attention to the frequency of association between heart disease and lesions of the pelvic viscera in women. Out of 419 gynaecological cases, 111 patients ($= 26\frac{1}{2}\%$) were found to have symptoms of organic heart disease.

Out of 31 cases of "haemorrhage" (uterine)

13 (= 42%) had symptoms of heart disease, 6 = pure mitral stenosis, 5 = pure mitral regurgitation and 2 = both of these lesions combined.

Dr Douglas Powell (ibid) drew attention to the frequency with which mitral stenosis was associated with congestion of other organs. He further said that menorrhagia was a common sequel in such cases, and that these cases might fairly be attributed to the general condition of the circulation.

My own opinion is that the menorrhagia in mitral stenosis is analogous to the haemoptysis in the same disease, that is, that the bleeding in each case is a result of backward pressure.

Dr Routh (ibid) commented on the relation of morbid states of the pelvic organs to the general system. He agreed with the older French physicians that, when erosion of the cervix was met with, generally a granular condition of the pharynx was found, both dependent on the circulatory system.

How are we to explain the metrorrhagia in such forms of heart disease as mitral regurgitation and mitral stenosis? It appears that the two main factors are:-

1. Backward pressure, causing venous congestion of the uterine mucosa.
2. A special friability of the venous walls, in the uterine mucosa, owing to imperfect nourishment, due to the anaemia of the arterial system.

Vérin in These de Paris 1894, quotes Sireday, who think that the metrorrhagia in many cases, may be due to development of varicose veins in the walls of the uterus. Raciborski (also quoted by Verin) thinks that a varicosed condition of the ovarian veins (ovarian varicocele) may lead to metrorrhagia.

Lastly, we must remember the possibility of miliary aneurisms on the vessels of the mucous membrane of the uterus, leading to haemorrhage. Hypertrophy of the heart also leads to uterine haemorrhage.

In atheroma of the arterial system, there may be uterine haemorrhage, but the haemorrhage usually manifests itself in some other part of the body, where the vessels are not so well supported, e.g. in the brain, thus leading to apoplexy.

Thinness and narrowness of the uterine blood - vessels may lead to chronic venous congestion and haemorrhage.

It appears, then, that abnormal conditions of the circulatory system have a considerable influence in the causation of haemorrhage from the uterus, and there is little doubt that, if, in all cases of heart disease admitted to hospital, particular attention was paid to the menstrual function, in many cases an increase in the menstrual flow would be discovered. Also, if the heart was carefully examined in all gynaecological cases, in many patients, lesions of both systems would be found.

Diseases of the Respiratory System leading to uterine haemorrhage.

There does not, at first sight, appear to be much connection between the respiratory and the reproductive systems, and yet there are certain diseases of the respiratory system, which predispose if they do not actually lead to, diseases of the reproductive system.

Mackenzie in Brit. Med. Jour., 1897, Vol.II, page 1562, in a paper on "the physiological and pathological relations between the nose and the sexual apparatus of Man", says that "in a certain proportion of women, whose nasal organs are healthy, engorgement of the nasal cavernous tissue occurs with unvarying regularity during the menstrual epoch, the swelling of the membrane subsiding with the cessation of the catamenial flow."

He also says that between the nasal and reproductive apparatus "a relationship exists, by virtue of which irritation of the one reacts upon the circulation, and possibly nutrition of the other."

Phthisis and Menstruation.

The relationship between phthisis and menstruation is a most interesting one. Handford (Brit. Med. Jour., 1887, Vol.I. page 153) says that in 1882 he called attention in his graduation thesis, " to

the connection of menorrhagia with pulmonary phthisis and that now clinical observation had convinced him of the truth of the following maxims:-

- 1st. Early or excessive (frequently only relatively excessive) menstruation is an important and common predisposing cause of phthisis.
- 2nd. The female children of phthisical parents tend to menstruate unduly early and excessively."

Several authors say that phthisis is sometimes the result, sometimes the cause of menorrhagia.

It has been noted that in some cases of early phthisis, there is menorrhagia instead of the usual amenorrhoea.

Grailly Hewitt in his book on "Diseases of Women", says: "According to my experience, young women, in whom there are signs of a tendency to, or an actual development of tubercle, are very frequently the subjects of profuse menstruation, the cause being the defective and vitiated state of the blood."

It would appear then:-

1. That young women, suffering from menorrhagia, from whatever cause, owing to the great drain on the system, and the defective nutrition of the tissues are liable to be attacked by the tubercle bacillus.

2. That young women, suffering from pulmonary phthisis are liable to suffer from menorrhagia, although in many cases, there is the opposite condition namely, amenorrhoea.

Coexistence of pleurisy and ovarian tumour has been noted.

Doran (Allbutt's System of Gynaecology, page 808) says: "It has been noted that, in several cases of ovarian tumour, pleuritic effusion is present. Cancer, of course, has been suspected, but, in several cases, the ovarian tumour was benign and the effusion disappeared, when the tumour was removed. - - - So far as innocent ovarian tumours are concerned, M. Demons of Bordeaux has published researches of great value. He has seen pleural effusion in 9 out of 50 cases of common ovarian cyst." In many of Demons' cases, when the ovarian tumour was removed, the pleural effusion disappeared. Demons attributes the pleural effusion to lymphatic obstruction, (that is) due to the interference of the tumour with the circulation in the abdominal lymphatics. In other cases, ascites existed along with an ovarian tumour, the ascites being probably also due to lymphatic obstruction.

In the above cases, then, it would appear that the ovarian tumour was the cause of the pleural effusion, and that the pleural effusion had nothing to do with the causation of the ovarian tumour. The following diseases may also lead to uterine haemorrhage:-

Acute bronchitis, owing to the accompanying fever.

Pneumonia " " " " "

Emphysema by producing backward
Cirrhosis of the Lung pressure, thus leading to
Tumours uterine congestion.

These diseases, as causes of uterine hæmorrhage are, no doubt, rare, but still they must be recognised as possible causes.

Diseases of the blood and ductless glands.

leading to uterine hæmorrhage.

Certain conditions of the blood predispose to uterine hæmorrhage, e.g. anaemia. In the ordinary anaemia of young females (i.e. chlorosis) the usual condition is amenorrhoea, but in some cases, menorrhagia occurs, e.g. chlorosis menorrhagica, mentioned by Virchow.

Case of metrorrhagia due to chlorosis, quoted by Vèrin, in his Thèse de Paris (1894).

Juliette S., aet 14, had influenza at 13. She began to menstruate for the first time on 9th Nov. 1890, without pain or malaise. Her period lasted five days. She lost nothing in December. Her next period was in January, when she lost much ("elle perdit beaucoup"). The loss continued for about ten days. She was put to bed and iron given. Under this treatment, patient got quite well.

Pernicious anaemia. In pernicious anaemia, there is often uterine haemorrhage, but, at the same time, there are haemorrhages from other mucous surfaces.

Plethora - a condition of too much blood in the body - is said to lead to uterine haemorrhage.

Leucocythaemia may cause uterine haemorrhage owing to

- a. Accompanying fever.
 - b. Enlargement of spleen
 - c. Enlargement of liver
 - d. Accompanying anaemia.
- } leading to
uterine congestion..

Lymphadenoma or Hodgkin's disease may lead to uterine haemorrhage owing to splenic enlargement and anaemia.

Addison's disease - which is supposed to be due to tubercular disease of the suprarenal glands - may lead to haemorrhage from the uterus. In this case, the haemorrhage may be the result of the anaemia or the loss of the internal secretion of the glands. Experimental observation, however, shows that this internal secretion exerts no haemostatic action. Exophthalmic goitre may lead to fatal uterine haemorrhage, as evidenced from the following case by Resnikow in Monats. f. Geb. u Gyn. 1895, Vol.II. page 233.

Case of exophthalmic goitre with fatal uterine haemorrhage. Patient, a well-built, and well nourished

girl of healthy family took ill in her 13th year with exophthalmic goitre. First menstruation took place in her 16th year. It lasted eight days, and was profuse with clots. The second menstruation occurred nine months later. During the first week, the flow was scanty, during the second, it was profuse, with large clots. The doctor was called in on the 18th day, when the patient could no longer lift herself from the bed. There was intense acute anaemia, waxy face, giddiness, tinnitus, almost continuous fainting, frequent thready pulse. Death occurred on the following day.

Constitutional diseases, which may give rise
to uterine haemorrhage.

Purpura haemorrhagica and haemophilia may be mentioned, although in these diseases haemorrhage may occur from other mucous surfaces, besides that of the uterus. Rheumatic fever may lead to uterine haemorrhage probably owing to the fever and the changes in the blood. Gout is said to predispose to uterine haemorrhage. Women of a gouty diathesis are said not only to menstruate early, but to have recurrent post-climacteric discharges, due to this dyscrasia. Scorbutus is sometimes a cause of uterine haemorrhage and a case was reported by Felkin in Edin. Med. Jour. 1887-8, Vol. XXXIII, page 316.

The haemorrhage in scurvy is probably due to anaemia and the changes in the blood.

Diabetes Mellitus. According to Lécorché (B.M.J.1886) metrorrhagia in a diabetic patient indicates a co-existent uterine affection and is not the result of diabetes.

Diabetes often produces dysmenorrhoea and amenorrhoea. Early menopauses may result from an overlooked diabetes. The menses may reappear, when the sugar disappears.

Syphilis and gonorrhoea are also causes of uterine haemorrhage, but I do not propose discussing them in this paper.

Uterine haemorrhage in febrile states.

Menorrhagia and metrorrhagia often occur in fevers. As a rule, the loss is slight and requires no treatment. Indeed, the loss may be of benefit to the patient. Zymotic diseases are often ushered in with haemorrhage, e.g. in scarlatina and measles, there may^{be} haemorrhage from the nasal mucous membrane, while, in other patients, there may be haematemesis. in other cases, and more particularly, in measles, scarlet fever, smallpox, typhus, typhoid, yellow and intermittent fevers, pneumonia, there is sometimes haemorrhage from the mucous membrane of the uterus. In these cases, the haemorrhage usually occurs at or

near the proper menstrual period; in fact, the haemorrhage may be nothing more than the normal process of menstruation.

In some cases, the haemorrhage may be so excessive, that active and prompt treatment is demanded.

The cases, in which the haemorrhage is unassociated with the menstrual function, may be said to be the ordinary cases of uterine haemorrhage, induced by the febrile condition. The cause of the haemorrhage is probably the increased arterial tension, along with the alterations in the character of the blood, whereby there is a deficiency of the fibrin forming constituents and consequent fluidity and want of coagulability. The following cases of menorrhagia, occurring in fever may be related.

Menorrhagia in measles.

Gemmell (B.M.J., 1892, Vol. I. page 502) relates such a case. A girl aged 9 years took measles. Five days later, she had a bloody discharge from the vagina. It lasted five days and subsided as the rash faded. Patient became quite well, and there was no renewal of the discharge. In such a case, the discharge is difficult to account for. Had menstruation been established, some explanation might have been offered.

Menorrhagia may occur in the haemorrhagic form of measles, which, however, is rather rare in general

practice. In this form, the rash becomes petechial and haemorrhages occur from all the mucous surfaces.

Menorrhagia in Scarlet Fever.

Knipp in Sajou's Annual, 1890, I -11, describes a case of Haemorrhagic Scarlatina.

Girl, aged 21, took severe form of scarlet fever with profuse uterine haemorrhage. There was purpura haemorrhagica on the face, neck, chest and extremities. The girl recovered.

Abnormal Conditions of the Mammary gland,
leading to menorrhagia.

Menstruation is usually suspended during lactation, but, sometimes, menstruation is very profuse, probably owing to the sympathetic influence that the one organ has on the other. Mammary irritation is said to lead to congestion of the uterus and promote haemorrhage from it, e.g. sinapisms or blisters applied to the breast often cause metrorrhagia.

Menorrhagia due to Animal Parasites.

Ascarides in the large intestine, by their irritation may lead to reflex congestion of the uterus and consequent haemorrhage.

Menorrhagia, due to Bothriocephalus Latus

Kahn (in St.Petersbourg Med. Woch. 1893) relates such a case in a young woman. The haemorrhage ceased, when the parasite was removed.

Menorrhagia due to Lead Poisoning.

Graily Hewitt in his work "Diseases of Women" says: "Menorrhagia may be present in cases of lead poisoning. Paul in the "Archives Générales de Medicine" describes several cases. He has collected 81 cases from the literature.

Baker in the London Obst. Trans., vol.VIII., describes three cases. All the patients were wives of painters. He says that lead poison closely resembles the action of syphilis on the foetus and uterus.

It appears also, according to Oliver in his "Goulstonian Lectures", that females are more susceptible to lead poisoning than males.

The menorrhagia may be due to the anaemia, although, as a rule, the anaemia is not very intense, or it may be due to reflex irritation, or to the arterio-sclerosis, with contracted kidneys and hypertrophied heart.

Diseases of the urinary system, leading
to uterine haemorrhage.

It is well known that several forms of kidney disease may lead to uterine haemorrhage.

Cases of metrorrhagia, due to Bright's disease.

Two cases published by Trier of Copenhagen. and quoted by Vêrin in Thèse de Paris. The following

are the particulars of these two cases:-

The patients, the first aged 44, the other 36, were admitted to hospital, on account of profuse metrorrhagia, which had caused extreme anaemia. Both patients suffered from attacks of headache, vertigo, nausea and vomiting. Examination of the reproductive organs revealed nothing abnormal. (L'exploration ne révéla aucune lésion des organes génitaux.)

The first patient died at the end of two days, the second on the ninth day; in the latter case, the symptoms, which she exhibited were thought to be uraemic manifestations. In both cases, the necropsy revealed, as the principal lesion, a chronic nephritis, with hypertrophy of the left ventricle, and recent pericarditis in the second case. There was no organic lesion in the uterus, except thinning of the muscular coat of the small arteries." Of course, in chronic nephritis, haemorrhage may occur from other parts, e.g. in the brain (apoplexy). The explanation of the haemorrhage is that the hypertrophied heart raises the blood pressure and the arteries, owing to their diseased condition, are unable to stand the strain and so rupture.

West in "Diseases of Women" page 54, says:- "In cases of granular degeneration of the kidney, menorrhagia is far from uncommon." West thinks the

menorrhagia is due to the altered, attenuated condition of the blood, whereby the blood escapes more easily. Acute Bright's disease is said to give rise to uterine haemorrhage, probably due to the anaemic condition of the blood. Tumours of the kidney, by pressing on the veins and causing venous retardation, may lead to uterine haemorrhage. Moveable kidney is given as a cause of uterine haemorrhage by Tauszky in the Am. J. M. Sc. Phila. 1881.

Cystitis is also mentioned by Tauszky, who says the haemorrhage in this case is due to reflex congestion of the uterus.

Albuminuria is also given as a cause, due to the blood being thin and watery.

Nervous System.

The following causes of uterine haemorrhage are given by Byford in his "Diseases of Women".

- a. "Mental and emotional excitement, emanating directly from the brain.
- b. Cerebral and spinal excitement, originating in inflammation or functional exhaustion of the brain or spinal cord, for example, cerebro-spinal inflammation."

Some forms of mental disease may lead to uterine haemorrhage, for example, melancholia.

Integumentary System.

Strong impressions upon the cutaneous surface, as from cold, or from the long-continued application

of heat in warm climates and seasons, may give rise to uterine haemorrhage. It is well-known that children in hot climates are apt to menstruate early and also that people, going from a temperate climate to a hot one, are apt to have profuse menstruation.

Conclusion.

From the foregoing pages, it will be seen that many different conditions may lead to uterine haemorrhage. And this is what one would expect, seeing that uterine haemorrhage is a symptom and not a disease. Some of the causes, which I have brought forward are common and may be seen in everyday practice; others are less common, while others again are extremely rare. Little has been said with regard to treatment, as, the cause being known, the treatment will be obvious, for example, if anaemia is present iron and tonics will be prescribed; if the heart is at fault, the aim of the practitioner will be to improve the condition of that organ, and so on.

In treating a case of uterine haemorrhage, the practitioner should take a broad view of the case, bearing in mind that many conditions outside the uterus may be at work, leading to the haemorrhage. In this way, the treatment will be founded on a rational basis and will the more likely prove of benefit to the patient.

FINIS.

S Y N O P S I S.

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PART III.

Diseases leading to Uterine Haemorrhage and classified under the following heads.

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